IE-MiniFiberLinX-II

SNMP-Manageable Optical Ethernet Demarcation Unit For 10/100 Mbps Ethernet

RoHS Compliant

Compact Fiber Optic Network Interface Device for Industrial-Grade Delivery of Transparent LAN Services over Fiber, with Media Conversion, Carrier Grade Remote Management and Line Provisioning Capabilities.

Features

- Smallest Standalone Fiber Optic Network Interface Device
- VLAN Compatible - secure and separate customer traffic
- Supports passive 802.3ah OAM (Operation, Administration & Management)
- Extra Tagging (Q-in-Q)
- Supports Remote Loopback with MAC Address Swap

Management

- Carrier-grade SNMP management and line provisioning
- Link loss and loopback troubleshooting
- Free iView² EMS allows remote bandwidth management and traffic prioritization

"Industrial Equipment" (IE) features for operation in difficult environments

- Extended temperature functionality, up to -20° to +75° C
- Multiple power options: AC, DC and 802.3af Power over Ethernet
- DIN clips for DIN-R ail mounting

Quality product

- Made in America with a comprehensive six-year warranty

Transparent LAN service providers require remote management capabilities, and must be able to isolate management traffic and customer data. Typical Customer Premises Equipment (CPE) do not allow this, since those devices are usually owned by the customer and inaccessible to the network operator. The compact IE-MiniFiberLinX-II, functioning as a more advanced Network Interface Device (NID), is designed for operation by service providers and campus network administrators. It provisions point-to-point fiber optic connections and provides a remote network interface at the customer's location that monitors the entire link between two locations.

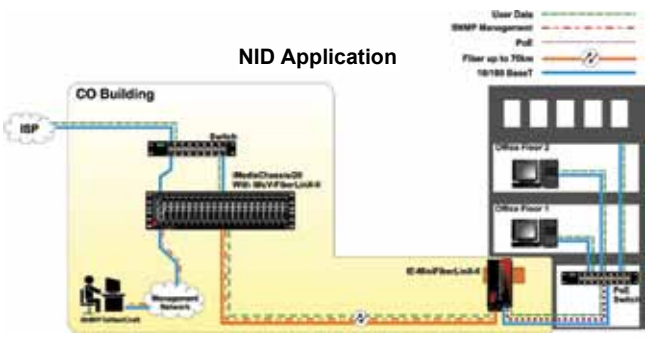
The IE-MiniFiberLinX-II for fiber optic networks allows service providers to deliver managed, high-bandwidth "triple play" voice, video and data services to customer premises.
The IE-MiniFiberLinX-II and the fiber link can be managed as a single entity, allowing remote configuration and autonomous alerts to network administrators on fault conditions. As a copper-to-fiber media converter, it allows low-cost copper switches to connect to the fiber line. Offering unparalleled flexibility, the IE-MiniFiberLinX-II supports multiple fiber types including multi-mode and single-mode as well as single-strand fiber, doubling the capacity of installed fiber. Coarse Wavelength Division Multiplexing (CWDM) functionality is also an option.

The IE-MiniFiberLinX-II comes equipped with one 100 Mbps fiber port for data and management, one 10/100 twisted pair port for customer data, as well as an RS-232 port for local configuration on the unit during installation.

The IE-MiniFiberLinX-II supports multiple powering options. Use the included AC power adapter or use a 4-terminal DC power block, which has an extended voltage range of 5 to 50VDC. The IE-MiniFiberLinX-II also complies with the IEEE 802.3af Power over Ethernet standard, acting as a Powered Device (PD) to draw power when connected to 802.3af-compliant Power Sourcing Equipment (PSE).

Combining copper-to-fiber conversion, extended temperature performance, plug-and-play operation, miniature size and multiple power options, the IE-MiniFiberLinX-II is one of the most versatile fiber optic NID devices available on the market today.

Typical Application—Service Provider



CARRIER ETHERNET MEF Certified Compliant

Full-Featured IE-MiniFiberLinX-II

From a central location, network operators are able to receive real-time device and traffic statistics on the remote device, allocate bandwidth, turn services on or off, initiate loopback testing, modify VLAN settings and adjust QoS policies assigned to different traffic types.

- **VLAN Support—** VLAN tagging capability keeps customer data and SNMP traffic separated
- **Troubleshooting Features—** FiberAlert, LinkLoss and 802.3ah Passive OAM (Operations, Administration and Maintenance) assist in diagnosing potential problems on fiber optic networks
- **Loopback Testing—** Functionality loops back all frames arriving on the fiber port (except for the device's management traffic). Supports MAC Address swap on Loopbacks
- **Bandwidth Control—** Fine granularity allows operators to offer custom levels of service and easily change bandwidth allocation, remotely, in seconds via SNMP
- **Supports the Unified Management Agent (UMA)—** The FiberLinX family has always supported Host/Remote environments, i.e. managing the Remote from the Host location. With UMA, operators can centrally manage all devices installed in an iMediaChassis using only a single IP address for the chassis. Refer to the UMA data sheet for more information

Using the VLAN Functionality on the IE-MiniFiberLinX-II

Service providers routinely use IEEE 802.1Q Virtual Local Area Network (VLAN) tagging to secure, separate and differentiate customer traffic. The IE-MiniFiberLinX-II enables service providers support of multiple VLAN-based applications.

- IEEE 802.1Q VLAN compatible
- Valid VLAN IDs are 1 to 4,094
- Port-based VLAN tagging and Q-in-Q (extra tagging)
- Transparency Mode passes all data and respects the VLAN tag or lack thereof, i.e. allows a mixture of VLAN Tagged and Untagged traffic
- Configure to support VLAN IDs, filtering/passing up to 32 VLAN IDs for data, plus an additional VLAN ID for SNMP management
- IEEE 802.1p provides a two-tier queue for differential prioritization of inbound and outbound traffic, which is especially beneficial for traffic requiring high priority, such as VoIP

Using Coarse Wavelength Division Multiplexing (CWDM) with the IE-MiniFiberLinX-II

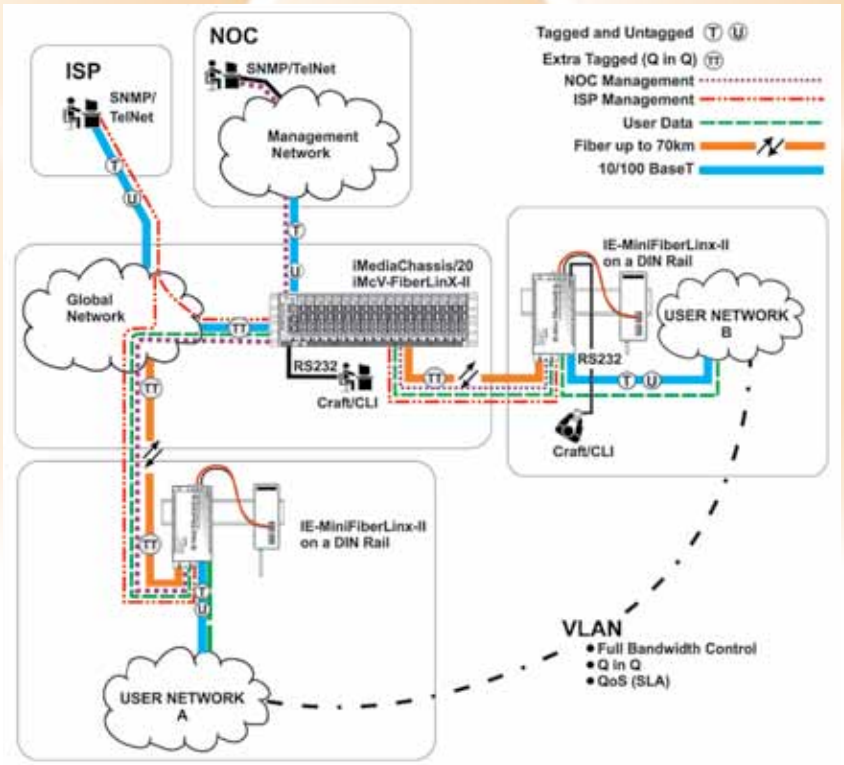
Optionally, the IE-MiniFiberLinX-II provide for Coarse Wave Division Multiplexing, adding scalability to data delivery

- Scalability allows transport of data on up to eight wavelengths
- Increase bandwidth without the addition of more fiber strands

SNMP Management Made Easy

The IE-MiniFiberLinX-II features an SNMP management agent for monitoring the status and activity on copper and fiber ports at the remote end. Initial setup and modifications can be performed in the field via iView² SNMP application, Telnet/TFTP, or a local serial (CRAFT) connection.

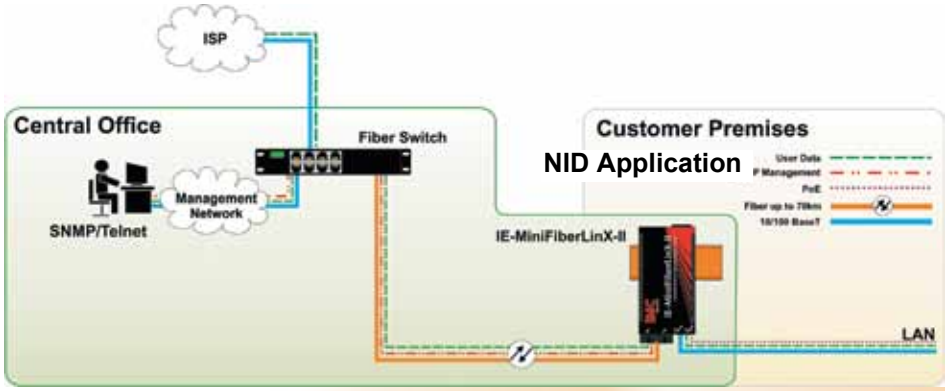
- Remote, software upgrades via Telnet/TFTP or management software (iView²)
- Monitor unit and fiber with real-time monitoring and statistics
- Change bandwidth "on-the-fly" up to 100 Mbps
- Create a secure management domain to isolate management domain broadcasts from TX Data ports on both units
- User-definable unit/port descriptions and information



Application Examples (cont.)

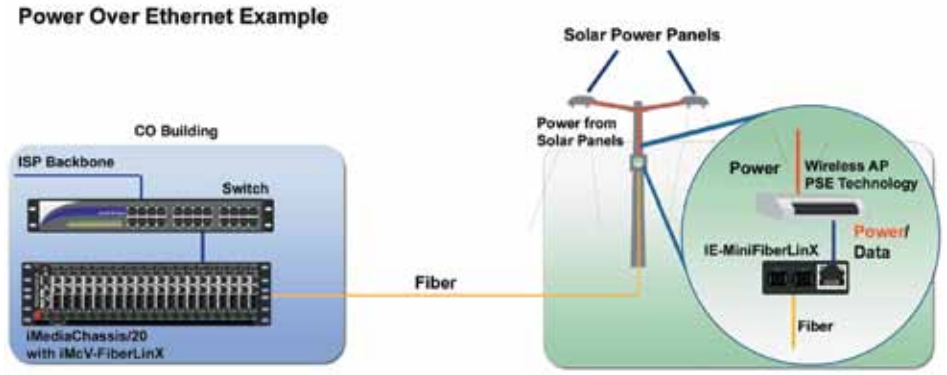
Typical Application— Single IE-MiniFiberLinX-II Solution

Network operators can deploy a single IE-MiniFiberLinX-II in stand-alone applications. At the Central Office (CO), a fiber switch connects via a fiber cable to the IE-MiniFiberLinX-II at the customer premises. The IE-MiniFiberLinX-II can be managed from the CO over SNMP or Telnet.



Typical Application— Powering Options

The IE-MiniFiberLinX-II is very versatile and offers a range of AC and DC powering options. It also supports 802.3af powering functionality, allowing it to act as a Powered Device (PD). The IE-MiniFiberLinX-II can be powered from a PSE-enabled wireless Access Point, which in turn can be powered by a remote source such as the solar panels on a street light. The data is transmitted over fiber to an iMediaChassis/20 with iMcV modules in the Central Office to form an end-to-end managed system.



Technical Specifications

Networking

General

- Preserves complete end-to-end fiber connection integrity
- Bi-directional bandwidth control
- Read/write IEEE 802.1Q VLAN-tags
- Supports Extra Tagging (Q-in-Q)
- Supports passive 802.3ah OAM (Operation, Administration & Management)
- QoS: IEEE 802.1p-based packet prioritization (2 queues [high/low] with 8 levels of priority)
- Layer 2 packet switching, store and forward operation
- Forwarding rate: 14,881 pps for 10 Mbps; 148,810 pps for 100 Mbps
- AutoCross for MDI/MDIX
- Features Auto Negotiation and Selective Advertising
- Supports Half and Full-Duplex operation
- MTU: Supports over-sized packets up to 1916 bytes per packet

Security

- Password Control
- Multiple Access Levels: User Assigned Accounts & Access Levels

Management

- SNMP V1 and V2c compatible
- Includes GUI-based iView² software for remote management and upgrades
- Monitors far-end (remote) status without a physical presence or separate connection
- IEEE 802.3x Flow Control
- Includes DHCP and TFTP clients
- Supports Telnet
- Includes loopback test modes (MAC swap)
- Includes LinkLoss and FiberAlert
- Supports the Unified Management Agent (UMA)
- Includes status LEDs
- RS-232 (Craft) interface for local management
- Serial cable for direct connection to a PC's Serial Port

Ethernet Types Supported

- IEEE 802.3i 10Base-T twisted pair
- IEEE 802.3u 100Base-TX twisted pair
- IEEE 802.3u 100Base-FX or SX fiber

Physical Specifications

RoHS Compliant

Fiber Types Supported

- 50/125µm or 62.5/125µm multi-mode fiber
- 9/125µm single-mode fiber
- Single-strand fiber or CWDM

Connectors: RJ-45, and ST or SC

Shipping Weight: 0.30 lbs (0.11 kg)

Dimensions: 0.83"H x 1.80"W x 3.35"D (2.11 x 4.57 x 8.51 cm)

Environmental

- Humidity: 5% - 95% (non-condensing)
- Operating Temperature: -4° to +167° F (-20° to +75° C) excluding AC wall adapter; with AC wall adapter: +32° to +122° F (0° to +50°C)
- Storage Temperature: -49° to +185° F (-45° to +85° C)

Power

- DC Input Voltage: 750mA @ 5V to 75mA @ 50 VDC
- IEEE 802.3af Power over Ethernet

Technical Specifications (con't.)

IMC MIB:

- Traps (Cold Start, Warm Start, Authentication Failure, Link Up, Link Down, Remote Unit Lost, Remote Unit Back Online, Far End TX Link On and Far End TX Link Off)*
- Link Status of Ports
- Port Type
- Fiber Type
- SNMP Port (Host/Remote)
- SNMP Agent IP Address (Host/Remote/Single)
- Link Partner
- User-Definable Name of Product
- User-Definable ID/Name of Ports
- Enable/Disable Ports
- Enable/Disable FiberAlert
- Enable/Disable loopback modes
- Set Duplex Mode for Twisted Pair Ports
- Set Auto Negotiation/Speed for Twisted Pair Ports

MIB-II (RFC 1213):

- Packets Transmitted
- Packets Received
- Octets (bytes) Transmitted
- Octets (bytes) Received
- Plus All Standard MIB II Objects

RMON Statistics provided for:

- Drop Events
- Total Bytes
- Total Packets
- Broadcast Packets
- Multicast Packets
- CRC Align Errors
- Undersize Packets
- Oversize Packets
- Fragments
- Jabbers
- Collisions
- Distribution of Frame Size

*Send traps to a virtually unlimited number of trap-host server destinations.

Ordering Information

PART NUMBER W/ AC ADAPTER	PART NUMBER W/O AC ADAPTER	DESCRIPTION	DISTANCE
IE-MiniFiberLinX-II TP-TX/FX (Industrial Ethernet)			
856-19717	856-19740	IE-MiniFiberLinX-II, TP-TX/FX-MM850-ST	2 km
856-19718	856-19741	IE-MiniFiberLinX-II, TP-TX/FX-MM850-SC	2 km
856-19722	856-19732	IE-MiniFiberLinX-II, TP-TX/FX-MM1300-ST	5 km
856-19723	856-19733	IE-MiniFiberLinX-II, TP-TX/FX-MM1300-SC	5 km
856-19724	856-19734	IE-MiniFiberLinX-II, TP-TX/FX-SM1310/PLUS-ST	40 km
856-19725	856-19735	IE-MiniFiberLinX-II, TP-TX/FX-SM1310/PLUS-SC	40 km
856-19726	856-19736	IE-MiniFiberLinX-II, TP-TX/FX-SM1310/LONG-ST	40 km
856-19727	856-19737	IE-MiniFiberLinX-II, TP-TX/FX-SM1310/LONG-SC	40 km
856-19730	-	IE-MiniFiberLinX-II, TP-TX/FX-SM1550/LONG-SC	80 km
856-19728	-	IE-MiniFiberLinX-II, TP-TX/FX-SM1550/XLONG-SC	100 km
IE-MiniFiberLinX-II TP-TX/SSFX Single-Strand Fiber* (Industrial Ethernet)			
856-19750	856-19760	IE-MiniFiberLinX-II, TP-TX/SSFX-MM1300-SC (1550rcv)	2 km
856-19751	856-19761	IE-MiniFiberLinX-II, TP-TX/SSFX-MM1550-SC (1310rcv)	2 km
856-19752	856-19762	IE-MiniFiberLinX-II, TP-TX/SSFX-SM1310-SC (1550rcv)	20 km
856-19753	856-19763	IE-MiniFiberLinX-II, TP-TX/SSFX-SM1550-SC (1310rcv)	20 km
856-19754	856-19764	IE-MiniFiberLinX-II, TP-TX/SSFX-SM1310/PLUS-SC (1550rcv)	40 km
856-19755	856-19765	IE-MiniFiberLinX-II, TP-TX/SSFX-SM1550/PLUS-SC (1310rcv)	40 km
856-19756	856-19766	IE-MiniFiberLinX-II, TP-TX/SSFX-SM1310/LONG-SC (1550rcv)	60 km
856-19757	856-19767	IE-MiniFiberLinX-II, TP-TX/SSFX-SM1550/LONG-SC (1310rcv)	60 km

* These products have single-strand fiber technology. Deploy in pairs, or connect to another compatible IMC Networks single-strand fiber product. For more information go to: www.imcnetworks.com/products/SSFX.cfm

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